

**P**hotovoltaics is very often the preferred power source for residences in remote areas not served by the utility grid.

Why PV on a residence? PV is the logical choice when the cost of having electric lines run to a home is too expensive. PV may also be preferable because the alternative would be a noisy, smelly generator or another power source less reliable than PV.

Increasingly, however, there are instances where the grid is available, but the homeowner simply wants either the independence possible by owning a PV system, or feels strongly enough about environmental issues that the correct choice for that homeowner is some form of renewable energy in lieu of the electric grid.

So-called 'stand alone' PV systems may be roof mounted, pole mounted, or ground mounted, all of which are depicted here. Each has some special design or installation requirements, but each can supply remote residential power quite reliably.



◁ The large remote Navajo Nation in Arizona and New Mexico is the ideal setting for photovoltaic power systems. This home is in the Whitehorse Chapter of the Navajo Nation, where 22 identical systems were installed by AAA Solar. All systems include four Siemens 100W modules on a pole mount, eight Exide E-3600 220 AH deep-cycle batteries, and a Trace DR series 2400W inverter. Enough power is produced for lighting, some small appliances, and a very efficient small refrigerator. *[Photo courtesy AAA Solar]*

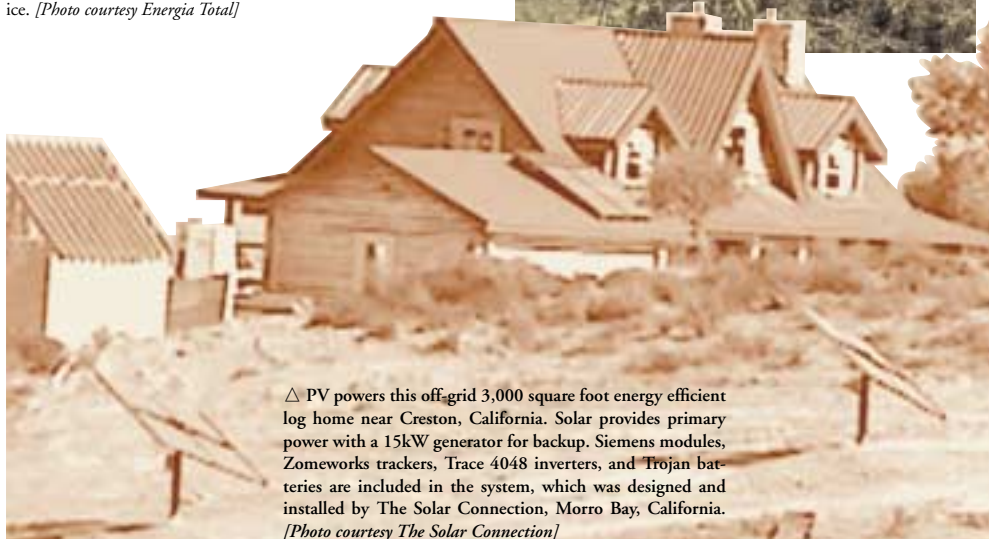
▷ The Willey family, owners of Backwoods Solar Electric Systems, use photovoltaics to power their combination home and solar catalog business. The site is located on an Idaho mountain two miles from utility lines. *[Photo courtesy Backwoods Solar]*



◁ Remote residences are but one place where a photovoltaic unit such as these GenSun solar powered energy systems would prove useful. *[Photo courtesy GenSun Electric Solar Systems, Inc.]*



△ Energia's 600 watt stand-alone FireFly (using BP-275 modules, a Trace sine wave inverter, and Exide batteries) provides electricity to a family living on Pajarito Mesa, a colonia, or unincorporated Hispanic community. While only 5 miles from Albuquerque, New Mexico, about 150 families live without electric service. *[Photo courtesy Energia Total]*



△ PV powers this off-grid 3,000 square foot energy efficient log home near Creston, California. Solar provides primary power with a 15kW generator for backup. Siemens modules, Zomeworks trackers, Trace 4048 inverters, and Trojan batteries are included in the system, which was designed and installed by The Solar Connection, Morro Bay, California. *[Photo courtesy The Solar Connection]*



△ Ed Begley, Jr., actor and environmentalist, admits his off-grid solar-powered home in the heart of Los Angeles is a sizeable investment, but he wouldn't want to live any other way. His system is comprised of 100 60-watt panels. He has the requisite large battery bank and sinewave inverter in his garage—where he also keeps his PV-charged electric car. *[Photo courtesy Ed Begley, Jr.]*



△ Kyocera Solar, Inc. provided 600W skid-mounted PV systems for 100 homes on the Navajo Reservation. The installations were purchased and installed by the Navajo Tribal Utility Authority (NTUA). *[Photo courtesy Jimmie Daniels, NTUA]*



△ Selway Bitterroot Wilderness Area (Idaho) is home to this remote lodge. Accessible only by air (or 28 miles of trails) this was a challenge for Kyocera Solar, Inc., installers. The system uses 48 60W Solarex modules, two Trace sine wave inverters, and 2-volt IBE batteries. A number of guest cabins, power tools, and household appliances are powered by the system, which was all transported in a small plane. *[Photo courtesy Kyocera Solar, Inc.]*



△ Built partly from recycled steel, this all electric stand-alone home near Prescott, Arizona is powered by a Siemens 11kW system, three Trace inverters and regulators, and Trojan batteries. Part of the PV is ground mounted and part roof mounted. Hitney Solar Products provided all of the panels and components. The large system powers, among other things, a home projection theater, ham radio studio, freezers, and a music studio. *[Photo courtesy Carol Hills, Serenity Studio]*

▽ In the Williamson Valley of Arizona, 18 Siemens Solar panels run along the roof edge (smaller panel is for hot water) of this off-grid home. Designed and installed by EV Solar Products, Chino Valley, Arizona; products provided by Hitney Solar. The installation uses a Trace inverter and Trojan batteries, together providing a 1.35kW array for the residence. *[Photo courtesy EV Solar Products]*

